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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,988	02/25/2004	Akishige Nakajima	501.43334X00	8960
20457	7590	05/03/2006	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			KALAM, ABUL	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/784,988	Applicant(s) NAKAJIMA ET AL.	
	Examiner Abul Kalam	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 7-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/25/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species I, claims 1-6, in the reply filed on April 7, 2006 is acknowledged. Thereby claims 7-17 are withdrawn from further consideration. Furthermore, claims 18 and 19 were cancelled in the preliminary amendment filed on February 25, 2004.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In lines 11-12, the limitation, "said fingers positioned at both ends of said second electrode is wider than a width of each of said fingers positioned between said both ends," is unclear. The claim does not clearly and distinctly specify whether the claimed "said fingers," recited in lines 11 and 12, are of the first electrode or second electrode. Thus, the scope of the limitation is indeterminate. Claims 2-6 are dependent on claim 1, and thus are also rejected.

In line 3 of claim 3, the limitation, "said fingers positioned at both ends," is unclear because the claim does not specify whether the claimed "said fingers" are of the first electrode or second electrode.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (US 5,955,763).

With respect to claim 1, Lin teaches a semiconductor device having a semiconductor chip formed with a transistor (fig. 1),

wherein said transistor has a first electrode ("drain electrode"), a second electrode ("source electrode"), and a control electrode ("poly gate"),

wherein each of said first and second electrodes is constructed by a base portion and a plurality of fingers projected in a direction orthogonal to said base portion,

wherein one of the fingers of said first electrode is disposed between neighboring two fingers of said second electrode (col. 4, lns. 23-26),

wherein said second electrode is connected to a fixed potential (col. 4, lns. 48-51), and

wherein a width of each of said fingers positioned at both ends of said second electrode ("source electrode) is wider than a width of each of said fingers positioned between said both ends (fig. 1, *the office interprets the claimed said fingers are of the second electrode, which Lin describes as the source electrode*).

With respect to claim 3, Lin teaches wherein the width of said base portion of said second electrode is wider than the width of each of said fingers positioned at both ends (fig. 1, *the office interprets the claimed said fingers are of the second electrode, which Lin describes as the source electrode*).

With respect to claim 4, Lin teaches wherein said first electrode is a drain electrode, said second electrode is a source electrode, and said control electrode is a gate electrode (fig. 1).

With respect to claim 6, Lin teaches wherein said base portions of said electrodes extend in the same direction, and said fingers of said electrodes extend in a direction orthogonal to an extending direction of said base portions (fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin '763.

With respect to claim 2, Lin teaches the semiconductor device as set forth above in claim 1, including: wherein said second electrode ("source electrode") has at least four fingers (fig. 1).

Thus, Lin teaches all the limitations of the claim with the exception of disclosing: wherein the width of each of said fingers of said second electrode positioned at both

ends is equal to or wider than a sum of the widths of said plurality of fingers positioned between said both ends.

However, the limitation, "wherein the width of each of said fingers of said second electrode positioned at both ends is equal to or wider than a sum of the widths of said plurality of fingers positioned between said both ends," is not critical. Note that the specification contains no disclosure of either the *critical nature of the claimed* "width of each of said fingers of said second electrode positioned at both ends is equal to or wider than a sum of the widths of said plurality of fingers positioned between said both ends," or any unexpected results arising therefrom. Where patentability is aid to based upon particular chosen dimension or upon another variable recited in a claim, the Applicant must show that the chosen dimension are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Why is it critical for the fingers of said second electrode positioned at both ends of said second electrode to be wider than the sum of the widths of the plurality of fingers? Why must the fingers at the ends be wider than the **sum of the widths** of the fingers, rather than a **width** of each of the fingers?

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin '763 as applied to claim 1 above, and further in view of Kazior et al. (5,343,071).

With respect to claim 5, Lin teaches the semiconductor device as set forth above in claim 1, with the exception of explicitly disclosing: wherein said first electrode is a

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collector electrode, said second electrode is an emitter electrode, and said control electrode is a base electrode.

However, Kazior discloses a semiconductor device, such as an MMIC, formed with a transistor, such as a heterojunction bipolar transistor (HBT). Kazior further discloses transistors formed with interdigitated electrodes, including a collector electrode, an emitter electrode, and a base electrode (col. 1, Ins. 42-50),

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor device of Lin to have a collector, an emitter, and a base electrode as taught by Kazior, because such a structure would have been considered a mere substitution of art-recognized equivalent values, MPEP 2144.06.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul Kalam whose telephone number is 571-272-8346. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AK
4/26/06


ANH D. MAI
PRIMARY EXAMINER